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Administrator
Daniel E. Quick

Village of Wauconda



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Message from the Village of Wauconda's Director of Public Works



David Geary

This report is intended to provide an overview of events and projects that the Public Works staff accomplished during the 2006-2007 fiscal year. Taking a close look at the past year has helped us to identify goals for next year and will better prepare us to achieve even greater success.

The past year proved to be a busy one for the Public Works Department. The year's most notable events included a number of coordinated multi-agency responses to emergency sewer main and lift station failures, precipitating some extensive planning for enhancements to our aging infrastructure. In addition, water service expansion into the unincorporated areas of Wauconda, commonly referred to as the North Water Project, was completed, adding 370 new water customers to the Village's service area. We also are nearing final completion of the water reclamation facility expansion, an electronics recycling program for area residents has been introduced, and the Village Board took steps towards helping our environment by initiating a plan to reduce winter salt usage on roadways.

Wauconda's Public Works Department is largely responsible for operating and maintaining the Village's infrastructure. Achieving regulatory compliance and providing residents a high level of reliable service are our primary goals with respect to these responsibilities. The Public Works Department is focused on infrastructure that affects our streets, street lights, street signs, parkway trees, curbs and sidewalks because of their visibility to the public, but equally important is the less obvious infrastructure systems that involve water service, waste water collection and treatment, and storm water management. These specific systems involve hundreds of miles of water, sewer, and storm water piping, lift stations, wells, elevated water tanks, pumping stations, water treatment facilities, and back-up generators.

In closing and on behalf of the entire department, we would like to thank the Mayor, the Village Board Members, and the Village Administrator for their steady support of our mission and their commitment to providing service for our residents.

Village of Wauconda - Public Works Facts

- 2.4 million gallons of water per day treated and distributed to customers
- 2.9 million kilowatts of electrical energy consumed serving Wauconda
- 8 wells capable of producing 3.2 million gallons of water per day
- 4 elevated water towers with storage capacity of 2 million gallons
- 120 lane miles of public streets
- Over 200 acres of public right of way
- Over 400 Stop Signs
- 190 Village owned street lights
- 790 fire hydrants
- 701 main water valves
- 5,340 water service customers
- 850 storm water catch basins
- 48 miles of storm water drain pipe
- 18 sanitary sewer pumping stations
- 12 stationary emergency power generators
- 5 trailer mounted emergency generators
- 12 dump truck/ snow plows
- Over 3,000 parkway trees
- 66.5 miles of water mains

Street Department



Sewer Spills along Route 176

On July 20th, 2006, the morning after a Public Works Committee approved of a 5-year Infrastructure Replacement Plan to address aging and deteriorating infrastructure, the first item on the Plan's list ruptured, causing sewage to spew from the ground. The sewage ran into the backyards of the homes located along Route 176 and a small amount ran into the channel leading to Bangs Lake. The Public Works Department worked with Environmental Quality, the Police Department, and the Fire Department to contain the spill and repair the break. Bang's Lake was closed for one day to ensure it was safe for human contact. Coordinated efforts were made with the media, IEPA, and the Lake County Health Department. The following day (July 21), the same sewer line broke about 200 feet west of the previous day's break. The same coordinated efforts were implemented and the break was repaired without any sewage spilling into Bangs Lake. The Village Board took quick action on the Infrastructure Plan and we expect to complete construction on a new Lift Station #3 and sewer main by July 2007.

Another Sewer Line Break - Bangs and Mill Street

On October 25th, 2006, the Public Works Department responded to a call of water seeping from the ground behind a home on Bangs Street. The Street Department determined that the source of the water was a sewer line break at a connection between the sewer line and an old manhole located in the back yard of the home at 336 Bangs Street. This particular sewer line carries waste from areas near Harmony Village along Route 59 to the Treatment Plant. Although the waste water did enter the storm water system, it was quickly contained before entering the Bangs Lake Drainage Ditch. At that time, two Vac-Trucks responded to the incident. One truck was used to work on the sewer line and the other one was used to clean up the spill into the storm sewer system. A bypass sewer line was established to carry sewer around the break and 24-hour staffing was scheduled to monitor the flow. A contractor was hired to make the repair and the manhole was replaced.

Lift Station #3 Pump Failure Floods Dry Well

On October 18, 2006, there was another incident at Lift Station #3 on Route 176. Public Works' crews were changing out a bad pump when the second, remaining pump failed. The failure caused the lift station's dry well to flood completely, affecting the electrical equipment located in the well. Bypass operations were implemented and remained in place 24 hours a day for 3 days. The pumps had to be repaired, parts were replaced, and the electrical system was overhauled and dried before the lift station was put back in service.

Fuel Spill on Bangs Lake

On Friday night of Wauconda Fest, a resident's boat sunk at the Park District dock causing a fuel spill on Bang's Lake. Public Works personnel were summoned by the Police Department to initiate the clean up. The spill was contained and cleaned up within an hour. Public Works staff entered the water (pictured below) to be sure all floating fuel was collected.



Thunder Storms Roll Through Wauconda

On Saturday, May 27, 2006, storm-related incidents initiated a call out of Public Works crews to address fallen trees that were blocking roads and a power outage at lift stations. A second thunder storm on Monday May 29th (Memorial Day) brought fierce winds that required crews to respond to a tree fall on Slocum Lake Road that blocked traffic. On that day there was also flooding in Larkdale and throughout other areas of town. Storm sewers were cleaned out and braches/brush removed from streets. The storms had caused enough damage that we kept crews on clean up the entire following week.



Again in the early morning hours on July 10th and July 18th, severe thunder storms with high winds caused widespread power outages and damaged trees throughout the community. Public Works employees responded to the storms and deployed three generators to lift stations that had lost power. Two of the stations were in close proximity to Bangs Lake, so response time was a critical factor. Wauconda received assistance from the Wauconda and Ela Township Highway Departments and the Village of Island Lake.

On August 24th, 2006, another early morning storm occurred. Public Works employees were prepared to take action in anticipation of the heavy storms moving into the area. The Village experienced long, erratic power outages and the water reclamation plant used a standby power source for six hours. A total of 2.1 inches of rain fell in the area.

Bangs Lake Drain Clean-up

Public Works employees monitor and clean out the area near the Bangs Lake Drain on southwest side of the Lake. This outlet gets clogged with debris such as seaweed, tree branches, garbage and other items. Public Works employees did a preventive maintenance cleanup to this area twice during the past summer.



Before: Bangs Lake outlet structure which is dammed up with growth and debris.....



After: Clean-up work complete.

Thermoplastic Re-Striping on Village Roadways

The Village conducted thermoplastic re-striping of roadway lines this past summer. This maintenance project represents about twenty percent of the Village's thermoplastic striping. The striping is evaluated each year to determine the areas that need to be re-stripped. On average, over a 5-year period all striping is redone.



New Street Signs and Installation System

A new type of sign post and a new installation procedure were implemented this past year. The old installation method was to push the post in using the bucket of our front end wheel loader. The new procedure is safer for the employees installing the signs. It involves a hydraulic unit that pushes a sleeve into the ground. The post is then simply inserted into the sleeve. If the sign post is hit by an auto, it will break off at the ground level causing less damage and easier replacement. The post is rectangular in shape and is similar to the signs which are used by the Illinois Department of Transportation (IDOT) along area highways.

Cul-de-sac Signs Replaced

There are a number of subdivisions in the Village of Wauconda that have cul-de-sacs. The Fire Department prohibits parking on cul-de-sacs and requires "No Parking" signs be installed in these areas to ensure access in the event of an emergency. The previous signs were confusing and misleading to residents. New signs were designed and installed in the Aspen Groves, Saddlewood, and Oak Grove Ridge Subdivisions.



SWALCO Agreement for Residential Electronic Recycling

The Village was excited to be able to develop and offer the residents of our community with an opportunity to recycle residential electronic devices. This new program, which is scheduled to start in May 2007, is a partnership with the Village of Island Lake and Wauconda Township. The Residential Electronics Recycling Collection program involves both weekday and weekend collection times, in an attempt to increase resident participation.

Beautification of Wauconda with Parkway Trees Continues

The Village's Tree Program is a partnership between the Village and its residents. The program involves the Village purchasing and planting approximately fifty trees in parkways, in the fall. Residents can request a tree and are then asked to water the trees until the new tree takes hold.

Village Arborist

In July 2006, Public Works employee Chris Esvang, who is a certified Arborist, became our Village's first official Arborist. Chris has been with Wauconda Public Works since October 2004. He is responsible for our town's tree care program and the overall beautification of the community. Chris' knowledge about trees and his passion for caring for them makes him a great asset to the Village. The Arborist will play a vital role in the Village's pursuit to gain "Tree City USA" designation. The Tree City USA designation will bring special distinction to our community.



Chris Esvang

Co-Host Arbor Day Event with Chamber

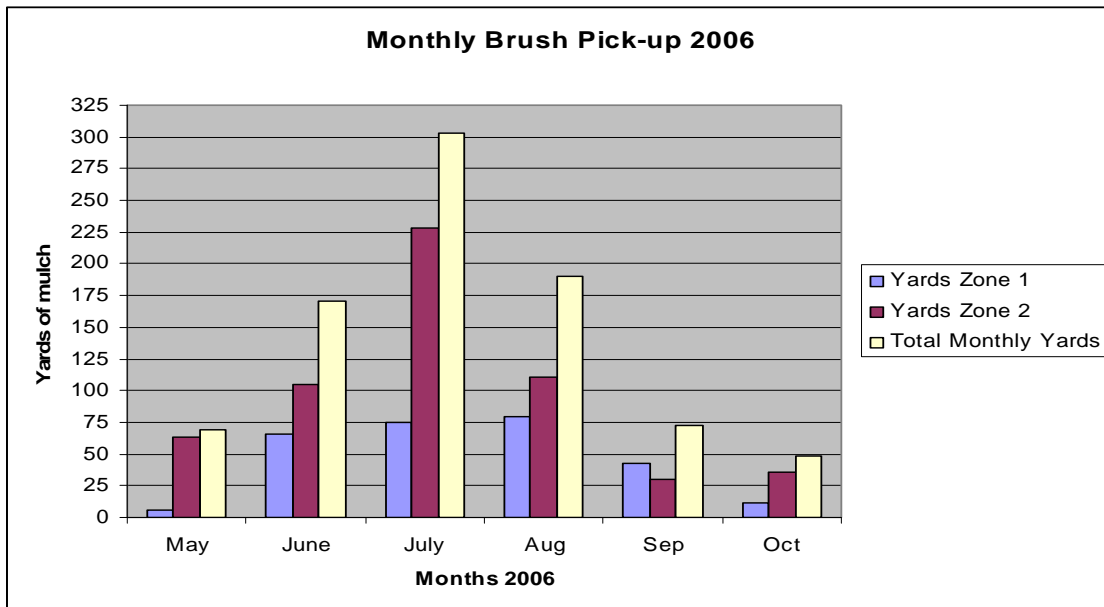
Friday, April 28, 2006 was declared as Arbor Day in Wauconda. In observance of Arbor Day, the Village and the Wauconda Chamber of Commerce partnered to host a tree and shrub sale for residents on Saturday, April 29th. The sale offered a variety of trees and shrubs at great prices. As an added bonus, the Village of Wauconda's Public Works Department provided free local delivery to those residents that needed assistance getting the trees to their homes. Our community's commitment to trees through community-wide programs will surely benefit the future of Wauconda.

Brush Pickup in Wauconda

The Village implemented a new brush pick-up schedule this past season. The plan called for brush pick-ups to be conducted during the last two weeks of each month throughout the season. Due to numerous summer thunderstorms and high winds, the brush clearance duties continued throughout the entire month of July and most of the month of August.

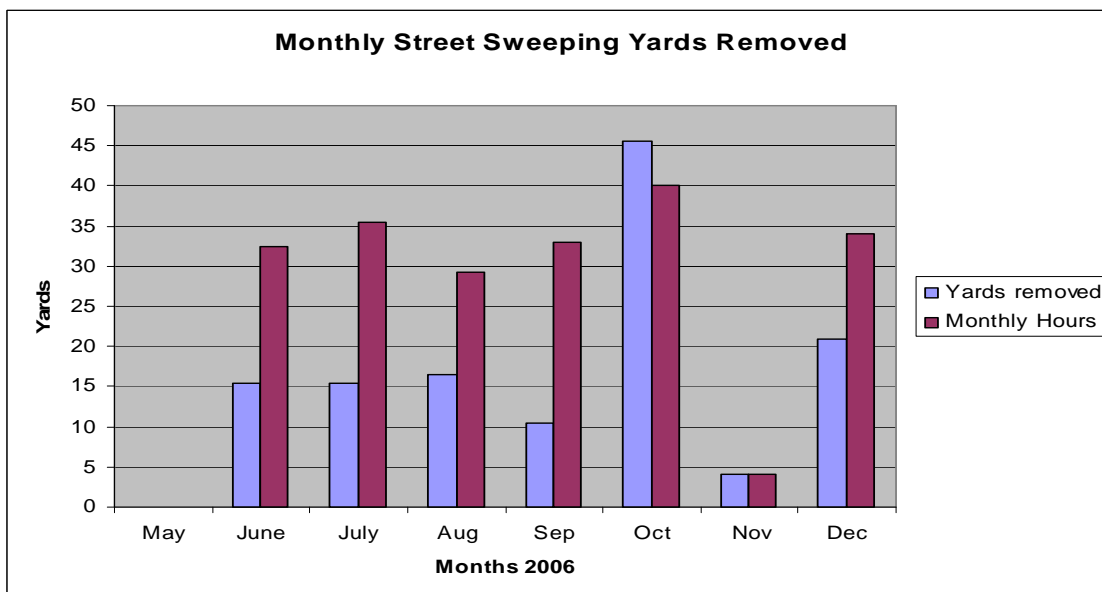


Crews removed over 200 dumpster loads of debris. Island Lake and the townships of Wauconda and Ela assisted with the storm clean ups this past summer.



Spring Time Clean-up and Beautification

During the last couple weeks of May 2006 our Public Works team was focused on cleaning up the streets and parkways in preparation for summertime in Wauconda. The clean up continued all year, as we implemented a new program of running the sweeper throughout the entire year when staffing was available. The total number of yards cleaned from the streets was 128.5 cubic yards.



Although we cover the entire Village with the sweeper, we schedule weekly cleaning on Main Street and Route 176, the two main arteries through our community. Two Public Works employees attended a training class on our Elgin Street Sweeper. This course provided valuable training on the operation of our street sweeper and will help to ensure that proper maintenance is done on the equipment, which will extend its useful life. By attending the class, we were able to make some adjustments with the manner in which we change brooms, thereby cutting the time needed to change the broom from 4 hours to 15 minutes.



Flower Baskets on Main Street

New flower baskets were added to the light poles on Main Street (in the downtown area). Other than looking great, the best thing about these flowers is that they require no maintenance and no watering because they are artificial.

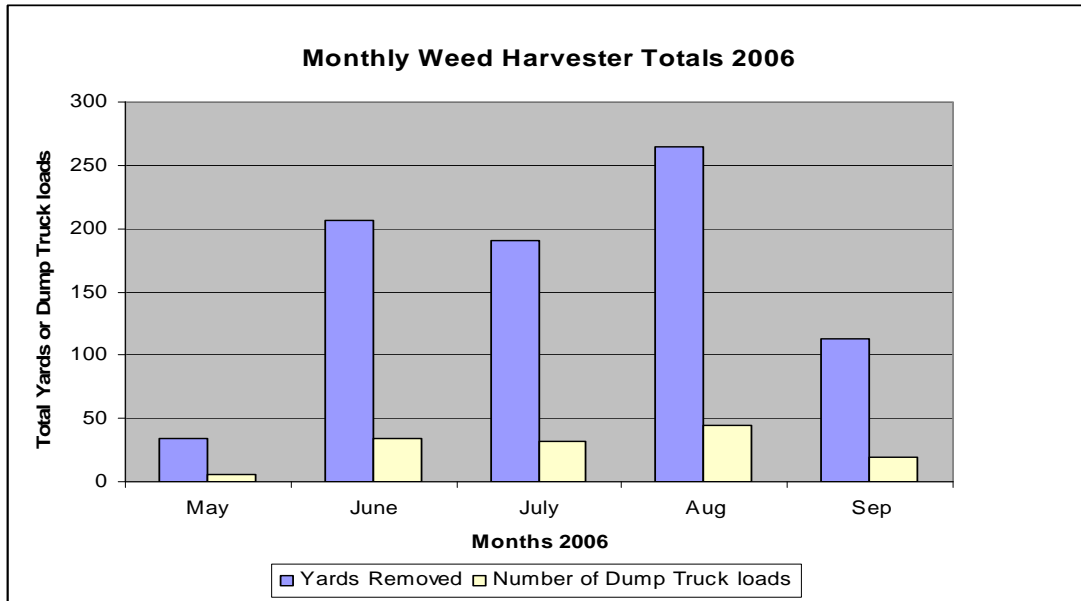
Generator Load Testing

Generator back up power is essential to our 24 hour a day, 365 day per year operation and because of the critical need we entered into a new contract this past year with a company to inspect and load test all stationary and trailer mounted generator units. This testing will be conducted annually. All items identified for repair have either been completed or planned for the up coming year.



Weed Harvester Activity

The Weed Harvester began cutting operations on May 30, 2006. During the first week of operation we removed over 34 yards of seaweed. In addition to utilizing the Weed Harvester, crews picked up seaweed from shoreline residents starting on Friday, May 26th, and both operations continued every Friday throughout the summer. Public Works staff was complimented by the Lake County Health Department for their good work on cutting the non-native invasive weeds and not cutting the good ones.



Purchase of a new 2007 International Dump Truck through State Purchase

The Village added to its fleet this year by purchasing a new dump truck. The truck arrived equipped with snow plow, salting equipment, and brine application equipment. The unit was needed to cover the new streets in the Orchard Hills and Liberty Lakes subdivisions of Wauconda. The purchase was made through State purchasing and the truck arrived in December, just in time to help with the snow season.



The truck purchased is similar to the ones in our current fleet with the exception of adding a stainless steel dump box and enhanced salt spreading equipment and controls. The stainless steel box will hold up better against salt deterioration and require little to no maintenance.

Purchase of a Mini Excavator Unit and Trailer

The Public Works staff who are assigned to use the mini excavator unit were able to assist in the selection of the unit by inspecting and using three different models of mini excavators. The various models evaluated had significant differences with respect to their capabilities. The Board approved the staff recommended purchase of the Kubota model. The Kubota unit has a larger horsepower engine combined with the deepest digging depth, and could operate in slightly tighter areas due to a smaller rear tail swing. In addition, the Kubota unit was the only one with an angled dozer blade, which has already been very useful when back-filling a trench and has a heavier body for better stability. Our staff found the Kubota unit to operate smoothly with better overall handling using hand and foot controls. The Kubota purchase was financed over a 5-year period.



Purchase of a new 2006 Wheel Loader for the Public Works Department



Public Works staff also participated in the evaluation and selection process for the purchase of a new wheeled loader. The new unit replaced a 35-year old unit, which was no longer in working condition.

The unit came equipped with a fully enclosed climate controlled cab, full-front and rear fenders, air suspension seat, and flashing warning lights. As part of the purchase we traded in our old unit which was out of service. The trade in gained us \$10,000 towards the new purchase. The unit was purchased from McCallister Equipment and will be financed over 5 years.

Snow Plan and Training Completed in time for 1st Snow Fall of the Year

During the last week of November 2006 the Public Works staff completed a practice and prepared the Village's snow equipment in anticipation of a large snow event predicted for December 1st. Arriving almost on schedule, the storm rolled in during the early morning hours, our crews were recalled and deployed just after 1:00 a.m. Crews worked non-stop until about 5:30 p.m. on Friday evening. They returned on the next morning (Saturday) at 3:00 a.m. to start pushing back snow and widening the roadways before a predicted heavy freeze set in. In addition to the roadways, they worked to clear municipal parking areas in downtown and sidewalks for the Annual Holiday Walk on Main Street. Crews returned again Sunday at 3:00 a.m. to finish clean up work in the Main Street Business Area and to open up the driveways into our Wells and Lift Stations. This was our kick off event for the season and it netted a 14 inch snowfall and a good practice for all.

Snow and Ice Removal Contract with Illinois Department of Transportation (IDOT) for Route 176 and Route 59

The Village entered into a contract with the Illinois Department of Transportation for snow and ice removal along Route 176 and Route 59. Although Wauconda will be reimbursed for its costs to cover these state routes, the enhanced service level and additional safety for Village residents who are traveling these two roadways through our community in the winter were the reasons behind the expanded service. The Village has one of its snow plow trucks equipped with a wing side plow, which makes it ideal for plowing wide roads like Route 176 and Route 59. IDOT officials called us late in the season to compliment the good job Wauconda had done on these State routes.



Emergency Notification System: Procedures for Snow/Ice Team Activation

Public Works began using the new Phone Notification System (Connect CTY) for activating the Snow and Ice Teams this season. The procedures were written and training was conducted with the Police Department's Dispatch staff. The Plan called for the Dispatchers to use the system once authorized by Public Works to call in the Teams. A report generated by the system allows us to know who was contacted within 10 minutes of the call-out.

Purchase of Anti-Icing and De-Icing Equipment Purchased

Public Works started researching the use of salt brine for anti-icing and de-icing operations during winter snow and ice in April 2006. We continued the investigation through to July until we recommended and the Board approved of a plan to phase in the use of brine over a two year period. Anti-icing with brine helps prevent snow and ice from developing on the road surface at the onset of a winter storm, as roads will be sprayed in advance of a storm with salt brine.



Above is a photo of the salt brine spray unit on the back of our one (1) ton dump truck

The brine provides a protective layer of diluted salt on the surface of the roadway which starts melting snow when it begins to fall. De-icing is the step of combating the snow and ice build up during the winter storm by pre-wetting the salt with brine as it is disbursed to the roadway. Benefits from using this new process can be summarized into the four areas listed below:

- Positive environmental impact on our lakes and wetlands by reducing the amount of salt used on the streets during the winter
- Reduced damage to parkway grass and plantings caused by salt.
- Cost savings from the estimated reduction (25%) in salt usage.
- Enhanced job with our snow and ice removal program.

Municipal Lot Re-Paving

The first phase of work was completed at the Municipal Parking Lot located on the corner of Mill and Maple Streets - just in time for the very successful Holiday Walk on Main Street. The work completed will provide adequate parking for the winter months. In May 2006, the Village cleaned up contaminated soil which was underground at this location, but was then delayed while awaiting Environmental Protection Agency approval before the repaving could start. Work will resume in the summer of 2007 on the final phase of the project. This last phase will include curbs, parkway enhancements, lighting, and the final coat of asphalt. The project is being funded with State Motor Fuel Tax dollars.

Main Street Sidewalks Replaced

The sidewalks in the downtown business area on Main Street were in need of replacement. Motor Fuel Tax dollars were used this year to replace approximately 50 percent of the walkways with the remaining sidewalks planned for completion during the summer of 2007.

Earth Day Ceremony at Apple Country

Public Works supported the Apple Country Homeowners Association with their Earth Day celebration on Saturday, April 22, 2006. A tree was supplied and planted by the Association, near Lake Napa Suwe. Mayor Saccomanno and Trustee Knigge attended Saturday's ceremony.

Five Year Infrastructure Plan Developed

During May and June 2006, Public Works staff and the Village Board's Public Works Committee worked on a 5-year plan for repairing and replacing the aging critical infrastructure within the Village. The plan considered lift stations, generation of back up power, water main replacement, and repaving of Village roadways. Once completed, the plan was used to identify and prioritize projects to be done with funds from revenue bonds.

Public Works Department is a Hit in the Annual Memorial Day Parade

The entire Public Works staff worked to prepare for the annual Memorial Day Parade, by pruning trees, pulling weeds, cleaning park benches, hand sweeping the sidewalks, and coming out early Monday morning to do a final street cleaning and add American flags to all the above ground flower baskets. Water, Water Reclamation, and Street Department staff members all

assisted with a special last minute clean and shine on the equipment that was headed to the parade line up. Eight pieces of equipment were involved in the parade. Our staff was proud and enjoyed driving the units through town with their families.



Revenue Bonds for Needed Infrastructure Repairs

In order to make needed repairs and replacements of critical infrastructure, the Village Board took steps in August and September 2006 to gain funding through revenue bonds. The Village's Treasurer worked with Speers Financial to oversee the application process for the funding. Revenue bonds for \$7.5 million were approved and funded at a very low interest rate of approximately four percent. These bonds will be paid back over a twenty-year period from water /sewer revenues and motor fuel tax (MFT) funds.

Village-wide Emergency Communications in Place

In a Village-wide effort by all department heads, the Village of Wauconda became the first community in Lake County to implement a web-based, out-bound calling system (Connect-CTY), which will allow Village officials to reach residents with time-sensitive information during unforeseen events or emergencies. With just one phone call, this new communication tool is able to contact all residents of Wauconda within just minutes - at their home, on their cell phone and via e-mail.

Bike Path Work

The Mayor and Village representatives began working with Wauconda Township officials to develop a plan to build a bike path which will run along Garland Road (from Cook Park to North Shore Boulevard). Additionally, plans were submitted twice in an attempt to obtain a grant for the work on the Bike Path. We are still awaiting results from the 2nd grant submission. If the grant can be obtained, the project would be expanded to run from Cook Park to Gossell Road.

Uniform Addition for Public Works

One new uniform shirt has been provided to all of the Public Works staff members. Modeling our shirt is our new Street Department Foreman, Alex Pryde. The shirt is embroidered with "Wauconda Public Works" and it is intended to be used for public appearances such as parades, expos, and community activities. Pictures were taken of all staff members and they will be hung in the entry hallway of the Public Works Building.



Alex Pryde

New Lift Station for Liberty Arms in Larkdale

With the addition of the Liberty Arms Senior Housing facility a new lift station was added to provide service to this area. This new lift station is the 18th owned and operated by the Village and will be added to our regular preventive maintenance program. This lift station is equipped with a generator, which is housed in the building (pictured on next page) just outside the Liberty Arms Senior Housing facility. This generator provides un-interrupted power to run the lift station in the event of a power outage.



Lift station for Liberty Arms in Larkdale

Public Works employees do monthly maintenance to all of the lift stations to ensure they are kept in top running order. Every Thursday the generators are automatically started and run to make sure they will operate properly when it comes time to run in a real power outage event.

Water Department



New Water Conservation Measure Enacted

The Village of Wauconda recognizes the importance of maintaining a safe and adequate supply of fresh drinking water and the fact that our region's supply of fresh water is not limitless. Also, many communities in Lake and McHenry County share the use of the underground aquifers which we use to supply our fresh water needs. As a good neighbor with those communities, the Village wanted to take all appropriate actions to ensure a continuing supply is always readily available and therefore enacted a permanent water conservation element to its current Village ordinance. The new conservation measures take effect in June 2007.

Hydrant and Valve Replacement Project

A contractor completed the scheduled water distribution system improvements including the replacement of two broken water main valves (Rt. 176 at Main Street, 330 S. Main Street), the replacement of four obsolete fire hydrants, and the abandonment of one fire hydrant on Main Street at Lewis Avenue. Our Water Department's involvement with these improvements included five water main shutdowns which involved coordination with business customers, notification of residential customers, pre-testing and operation of water main valves, supervision of chlorination, follow-up flushing and sampling after completion.

Water Billing to Full Page Format

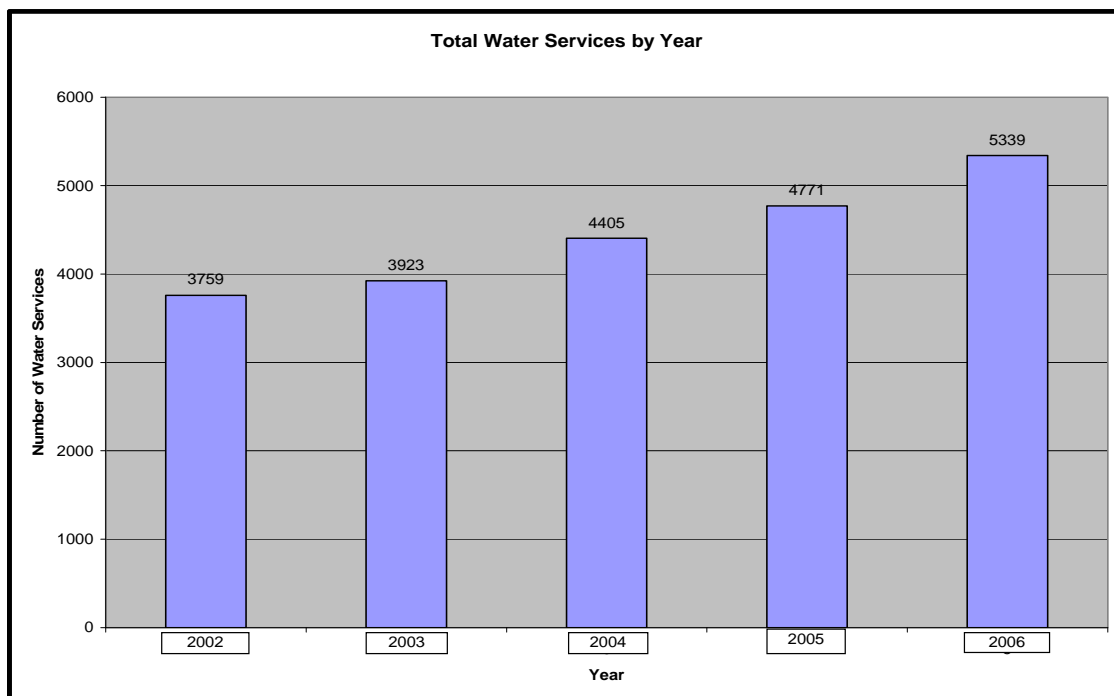
In September of 2006, the Village's water billing took on a new full page look. The new format utilizes bar codes to help speed up payment and mailing time. Other advantages are the ability to add special reminder notes at the top of the bill and the ability to distribute full page special announcements to the residents in the invoice envelop. This new format can easily be converted to a monthly bill format, once the Village has the ability to read meter more quickly using radio readers.

Water Main Flushing and Hydrant Testing

The Village of Wauconda maintains a First-Class water system. Our water goes through daily, weekly, and monthly testing throughout the year to monitor its quality. In addition to testing, another part of maintaining the water system involves flushing the water mains in strategic locations to keep the water fresh and clear, while maintaining the system. The flushing cleans and purges the pipes of any sedimentation which may be built up over a period of time. The Water Department flushed the water mains twice this past year in May and September of 2006.

North Water Project Update

Water main installation and service connections were made to 370 residential customers this year in the neighboring unincorporated areas of Wauconda Township who were involved in the Wauconda Sand and Gravel Super fund site. This is the culmination of a long-term project. The Water Department started in 2005 with the surveying of over 650 properties in the village for private wells. Then all identified properties due to be hooked up were surveyed door to door to determine where the inside meter and outside readers would eventually be located by the contractor. Over 24,000 feet of new water main was prepared for service with the department's supervision of flushing, chlorination, and the collection of 139 bacteriological samples. The Water Department also installed all water meters and readers for this project. In addition, all private wells were sealed and pumps removed. Work has begun to replace the water used by the new consumers with plans for well #10 at the water treatment plant on Gilmer Road near Tower 4.



Updated Water Distribution System Sampling Plan

Additions of new areas and developments added to our water supply demands, which prompted the Water Department to update its distribution system sampling plan. The new plan was submitted to, and approved by, the IEPA. Since the last plan update in January 2003, over 1500 new water services have been installed to service new homes and businesses. This requires an increase from 10 to 15 routine bacteriological samples per month from homes and businesses. Daily operational sampling will also increase. Since all routine bacteriological sample sites must be submitted to the IEPA for approval, 30 new sample sites were inspected and added to the plan.

Northern Lake County Lake Michigan Water Planning Group's Feasibility Study

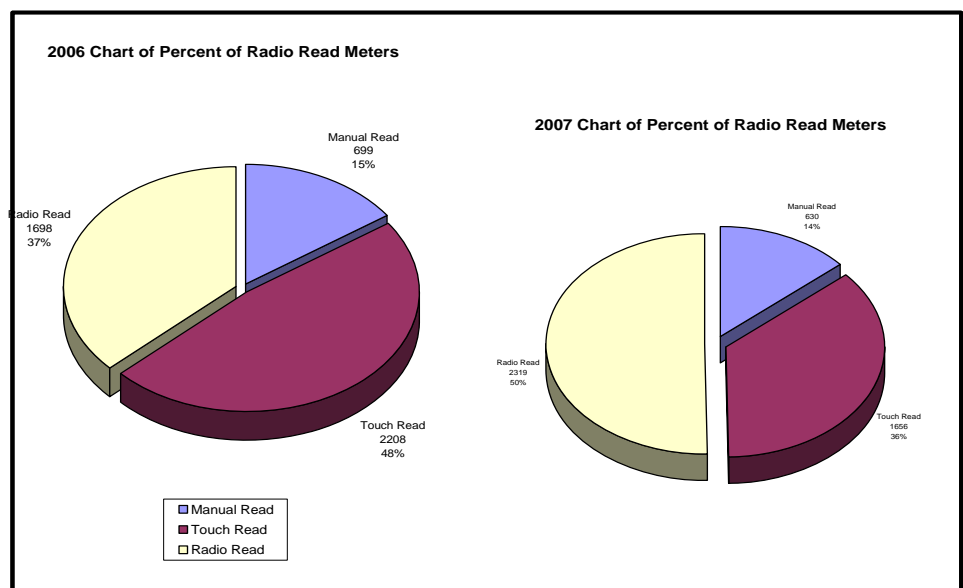
The Village of Wauconda joined forces with a number of communities in Northern Lake County to investigate and evaluate the costs and options available for communities interested in receiving Lake Michigan water. After our inquiry, Lake County invited Wauconda to participate in the assessment. Our goal is to understand the availability and feasibility of future water sources for the residents of our community. The cost for our participation was \$8,000 and results from the study are due out in 2007.

Meter Reading via a Vehicle Unit

In 2006, the Village purchased a Vehicle Transceiver Unit (VTU), which, once all meters are all converted to radio read, will allow us to read all water meters in the Village of Wauconda in a matter of hours. Currently, it takes one person a little over 2 weeks of reading time to read all meters in the Village. Starting in July 2006, this new VTU has been used on a monthly basis for water meters that are already radio read.

Conversion to Radio Read

A goal was set early this year to convert all meters to radio read over a 3 year period, beginning in 2006. We started in January 2006 with 699 manual-read meters, 2208 touch-read meters, and 1698 radio-read meters. At the end of December, 2006, 69 manual read meters and 552 touch-read meters had been converted to radio read.



Water Reclamation Facility Department



Class 1 and Class 2 Promotions in Public Works

Dave Miks was promoted to a Class 1 Operator and Luke Markko to a Class 2 Operator this past year. In both cases these two employees continued their education in pursuit of these achievements with no guarantee of an opening for them to fill. This type of enthusiasm and preparation for future promotional opportunity is appreciated and was recognized by the Village.

The Operator Class 1 level provides us with additional oversight and will be a key element in our succession planning for adequately staffing our water reclamation facility. The Plant is a class 1 facility, and therefore requires a staff member to possess an IEPA class 1 wastewater operator's license to run it. In order to obtain this license, a person must pass a difficult state certification exam. Our new Class 2 operator has only been an employee with the Village for one year. His quick progress towards this specialized education is a great example of hard work and extra effort.

Water Reclamation Employee Passes Class 3 Wastewater Exam

On July 17th, the Water Reclamation Facility received word that Jackie Schramm had successfully passed her IEPA Class 3 Wastewater Operator exam. Jackie demonstrated a great deal of effort to become eligible to even take the exam. Operators need a minimum of 3 years experience. Jackie was able to cut that minimum to two years based on her passing two wastewater correspondence classes. Late in 2006, Jackie was appointed by the Mayor and Board to be the Director of Environmental Quality for the Village of Wauconda. The Public Works staff wishes her great success in this new role.

Wauconda Water Reclamation Facility Passes USEPA DMRQA Study

Every year the USEPA requires the Water Reclamation Facility to participate in a quality assurance testing program. Our lab technician orders samples from an approved company.

These samples include everything that is required on our NPDES permit with the IEPA. The samples have a known value to them. Our Lab Tech's responsibility is to prepare and test the samples the same way they test our everyday samples. After the tests are complete, the results are sent back to the sample provider. An acceptance range is allowed for each sample. The requirement is that our results fall within an established acceptance range. We were able to pass each test that was required on our permit. Copies of our results are then given to the USEPA.

Fiddle Creek Inspections

Fiddle Creek was completely walked and inspected on three separate occasions in the year 2006. Fiddle Creek is the route our effluent takes from our discharge point on Anderson Road to the Fox River. Public Works personnel walked the creek from Anderson Road in Wauconda to Roberts Road in Island Lake. The three inspections took place in April, June, and October. The creek was freed of any blockages. Blockages typically include fallen tree limbs and beaver dams. The inspections were fully completed in April and October, but the wetlands were too overgrown during the month of June for full completion of the walk.

Land Application of Treated Sewage Sludge

A total of 1,556,500 gallons of sewage sludge was removed from our facility and land applied. Sludge was hauled offsite on three separate occasions during the months of May, August, and November. The sludge was removed, hauled, and land applied by Synagro Midwest. Synagro is a nationwide company that specializes in land application of sewage sludge. Sludge is aerobically digested at the Water Reclamation Facility. The sludge is then stored in an underground tank waiting for land application. Sludge was land applied in liquid form on all three occasions.

Heavy Rain & Flow Events

Rain and daily flows were below average for 2006. However, during 2006 we experienced the highest number of peak flows in the last five years. No NPDES violations occurred during any heavy flow events for 2006. The water reclamation facility is capable of treating 1.4 million gallons a day (MGD) on average and 4.0 million gallons per day (MGD) for a peak daily flow. Excess Flow clarifiers are put into use as storage during these high flows. This is a practice used by the operators to help take pressure off of the plant. The plant receives the maximum amount of flow that it can treat and the remainder (excess flow) is routed to the empty tanks. The excess flow tanks are later pumped down. The stored flow is then routed to the head works of the plant during normal flow times for normal treatment.

- **Peak Flow 1** – On March 12, 2006, plant personnel were called into work in the late evening. Two inches of rain had fallen by the early morning of the 13th. Excess flow had been routed to the excess flow tanks, and later pumped back to the head of the facility. Flows were still high in the afternoon of March 13th. All flow was 100% treated during the event.

- **Peak Flow 2** – June 25, 2006, Wauconda received approximately 2.5 inches of rain during the night. All flow was 100% treated with none entering our excess flow clarifiers. Plant staff was onsite from 2:30 a.m. thru 3:30 p.m. on the 26th. Flows continued to average about 2.0 MGD for the next week. All flow was 100 % treated.
- **Peak Flow 3** – On July 20, 2006, heavy storms and lightning passed through Wauconda in the early morning. Power was lost at 4:00 a.m. and later restored around 2:00 pm. One and nine tenths of an inch of rain fell from 4:00 a.m. to 10:00 a.m. All flow was 100% treated.
- **Peak Flow 4** – On August 24, 2006, in the early morning hours, our staff was onsite due to heavy storms. The facility was put on backup generator power at approximately 4:00 a.m. Heavy rain continued until 8:00 am. A total of 2.10 inches of rain had accumulated in that timeframe. The facility was put back on ComEd power at 10:00 a.m. Average flows dropped quickly after the event.
- **Peak Flow 5** – On December 21, 2006, operators were called into work early in the morning. Six-tenths of an inch of rain had fallen during the night of the 20th. Another 1.4 inches of rain would fall on the 21st. Peak flows began to reach 6.7 MGD. 100% of the flow entering the plant was treated. Flows continued high for the next week. Average flows didn't appear again until the New Year. This rain event was complicated by 8 inches of snow that had fallen in early December. No snow remained on the ground after all the rain had fallen. The total flow treated on December 22nd was the highest one day total for the year.

Water Reclamation Planned Maintenance Completed

New Weir Plates and Baffles for Secondary Clarifiers

The existing Secondary Clarifiers are twenty years old and had begun to show their age. Aluminum was used for the weir plates and baffles when the clarifiers were first installed. Aluminum over the years has shown to be very corrosive when used in wastewater applications. A contracted company, Peterson & Matz was contacted regarding the design of new weirs. Fiberglass weirs and baffles were constructed and installed by Water Reclamation Facility personnel. The weirs provide an equal distribution of water throughout the tank, while the baffles hold any scum layer that is later removed by the rotating arm.

New Decant and Valve Scope Replaced

The valve that was replaced is located in one of our aerobic digesters. The byproduct of sewage sludge, once it has been digested, is water and solids. Operators can shut down the air and the digestion process. A telescopic valve is lowered to remove the water and gain space in the tank. At that point the operator can raise or lower the valve to remove more water or to stop the process.

Install New Non-Potable Screener

A new Non-Potable Screener was installed at the Water Reclamation Facility. Treated effluent (recycled water) is used in our non-potable water system for the Treatment Plant. The recycled water is used at non-potable hydrants, odor control systems, chlorine distribution, and cleaning purposes. The water is pulled from the sand filter and passes through the screener. Screening removes debris that can harm the equipment that the water is used in.

Rebuilt Cross Collector #3 Speed Reducer

Seals and bearings were replaced on cross collector #3 speed reducer. The reducer is part of a drive mechanism that pushes sewage sludge to a valve for removal. Cross collectors are located at the primary clarifier's tanks. This is the first step in dividing water from solids in wastewater treatment.

New Drives Installed on Primary Clarifiers

New drives were ordered and built for our primary clarifiers through US Filter/Envirex. The drives were then installed by Seagren Construction. This company specializes in installing equipment for treatment plants.





The drives move chains that are connected to sludge and scum collectors. These collectors move through the width of the tanks and push sludge (at the bottom of the tank) and scum (the top surface of the water) to pits. These pits are then used for removal of the sludge and scum.

New Soft Starters Installed on Blowers

Two new soft starters were purchased and installed on our blowers by Berryman Equipment. The blowers are centrifugal motors that push air to digesters, aeration basins and our grit tanks. This air keeps solids in suspension, helps to freshen waste, and gives organisms the oxygen to breath. The soft starts allow the blowers to slowly ramp up to operating speed. This helps save the life of the equipment and saves energy costs because the blowers don't need to be idled down once they are started.

Replacement of Non-Potable Yard Hydrant

Four non-potable yard hydrants were replaced and one eliminated at the Reclamation Facility. The hydrants that were involved were twenty years old. Those hydrants were no longer sold, nor could parts be purchased for them. During the replacement, one of the hydrants was abandoned and an isolation valve was installed. This valve could then be used to isolate portions of the plant in case there was a break somewhere within the non-potable water system. Hydrants were purchased from National Waterworks and installed by our facility personnel.

New Sludge Density Meter Installed

A new sludge density meter was installed in our sludge pump room. This meter allows the operators to set the meter to specific sludge density consistencies. This prevents pumping solids that are low in sludge density. Pumping liquids too high or low in solids can disrupt levels in digesters and aeration tanks. The meter was purchased through Mobrey Instruments and installed by Morse Electric.

Airline Replacement & Restoration of a Valve

A leaking air line and a bad valve were discovered between our digesters. These problems were found during excavation being done for the treatment plant expansion. Repair materials were purchased through Mid American Water Supplies and installed by our Plant personnel. The leaking air line (cast iron) was removed and replaced with new piping (plastic). During the same time a gravity fed line off both digesters was dug up. A valve within this line was exercised and a new valve stem was replaced. Don's Welding fabricated the new valve stem.



New Alarm/Sensor Probe for Digester #1

A new sensor was installed in Digester #1. This probe is used for calculating liquid levels in the tank. This reading is also tied to an alarm system in case the levels of the digesters are getting to high.

Bobcat Utility Vehicle

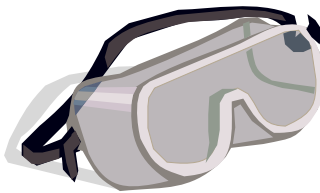
A utility vehicle was purchased as part of the Water Reclamation Facility expansion. The vehicle was purchased from Atlas Bobcat in Wauconda. The vehicle allows operators to load and tow tools/equipment, pumps, hoses, and supplies around the facility. The vehicle is also equipped with an enclosure, heater, and plow. This allows us to plow sidewalks and driveways within the Plant.



Good Results from Annual IEPA Inspection

On June 9, 2006, the Water Reclamation Facility had its annual inspection with the IEPA. Our inspector, Chris Kallis, was informed of the metal translator study that was conducted on the facility's final effluent. Test results can then help provide information on elevated copper levels at the facility. Chris was encouraged by this news and deemed this a step to be in the right direction for monitoring copper levels. Chris was pleased with the amount of split sampling that was performed with Northern Moraine Reclamation District. Northern Moraine is a treatment facility located in Island Lake. A detailed follow up report by Chris was later received by facility personnel. It was noted in the report that the facility was in compliance and well maintained.

Public Works Safety and Training



Safety Programs and Training

A review of critical safety programs, which included blood borne pathogens, confined space entry, trenching and excavation safety, and material safety data sheets (MSDS) was conducted this year. The written programs were enhanced with additional detail by our staff and then reviewed by experts in each respective area. These experts were also brought in to provide our employees with training on each topic. The Department is currently undergoing an exposure assessment of all materials and substances used by employees to ensure there is no unsafe exposure to our staff. The exposure assessment will be completed by May 2007 and will then become an on-going procedure for new products brought into the workplace.

Safety Team Created

A Team of representatives from each Public Works area was developed to review safety issues and provide management with topics for weekly safety communication sessions. The group made up of Chris Esvang – Street Department, Luke Markko – Reclamation, and Mark Gedde – Water Department all did an outstanding job of both identifying the topics (50 in total) and gathering their respective groups together for weekly safety reviews.

Monthly Training and Weekly Safety Training

A regularly scheduled Public Works training program was started this year. The training is intended to provide staff with cross training, enhanced safety awareness, and general updates about current projects. The meetings were held on the second Tuesday each month and included such things as fall protection, snow plow operations, trenching and shoring, commercial drivers license, vehicle inspections, blood borne pathogen awareness, material safety data sheets, and confined space entry.

Full Day Course on Confined Space Training

Public Works Department staff participated in a full day safety training class on the topic of confined space entry and locks out / tag out procedures. These two topics are amongst some of the top issues when it comes to employee safety. Employees reviewed how to enter confined space areas such as manholes and sewer wet wells safely. This training was documented and will be reviewed annually.

Competent Person Trenching Training

The Public Works Department recently completed specialized training in Competent Person Trench Safety. A person trained to the level of “Competent Person” is required to be on the scene during all trenching work. We now have 14 people trained in this area. The training was conducted in Wauconda by the Start Group, and included set up and operations of recently purchased shoring equipment. This new equipment is user friendly and easier to deploy quickly. Shoring is required to safely enter trenches deeper than 5 feet. The knowledge gained by this training will greatly reduce the chance of ground collapse and subsequent employee entrapment. Our employees are potentially exposed to these types of situations when dealing with water breaks and sewer repairs.

Water Reclamation Facility Safe Review

The waste water reclamation facility was reviewed for required safety equipment and proper labeling. In addition, confined spaces were also labeled and safety bases were installed at five locations of confined space entry. The bases are equipped for a Davit Arm Retrieval System. Davit Retrieval is what is used to raise and lower employees in and out of confined spaces. The Wauconda Fire Department was invited to participate in a confined space entry. Fire Department personnel were on site and were able to evaluate possible rescue techniques.

HAZWOPER

Luke Markko completed 40 hour HAZWOPER training with IESMC. This training is needed in order to perform daily inspections at the Wauconda Sand & Gravel Landfill. Luke was then trained in taking daily inspections at the landfill. Jake Mann, Duke Goessling, and Dave Miks all completed the 8 hour annual refresher course that is needed to maintain their HAZWOPER license. This training was provided by IESMC.

Intergovernmental Cooperation - Tour of Libertyville Treatment Plant

In September 2006, Jacob Mann and Betty Harrison went on a tour through the Libertyville Treatment Plant. The tour was a chance to view an activated sludge process, which is similar to the operation of our new treatment plant expansion. Our staff was able to have their questions answered regarding activated sludge process and to develop new relationships with the Libertyville staff.

Weekly Reclamation Plant Training Sessions

Weekly training sessions began this year in November on all phases of treatment at the facility. The purposes of the meetings were to help sharpen the skills of our operators. Operators were able to share their ideas and experiences with working with different types of equipment. Topics included lab work, maintenance, flow scheming, equipment, process control, etc. Seven sessions were conducted in 2006, for a total of 3.5 hrs of training.

Training and Use of New Vehicle Inspection Forms Implemented

In May 2006, Public Works staff participated in training session on vehicle inspections and the proper way to complete a new vehicle inspection form. A mechanic from a local garage was invited to speak about vehicle inspections and demonstrate how to properly identify items of concern. We also used this opportunity to roll out a new inspection form, which is now being completed and turned in daily when the larger dump trucks are used.

Public Works Staff Participates in Training on the National Incident Management System

Public Works was able to coordinate National Incident Management System (NIMS) training for our elected officials and all full-time Village employees. All supervisory Village staff completed an additional training class on the National Response Plan (NRP). These classes are required by the Federal Emergency Management Agency (FEMA) if Wauconda is to remain eligible for future emergency preparedness and response grants. The National Response Plan outlines responsibilities for Public Works staff as first responders and requires annual training.

On-going Training for Staff and Inspections Scheduled for Generators

As part of the on-going employee training program in Public Works, staff participated in three review classes focusing on operation and set up of portable generators at critical locations. Senior staff conducted the training for the department's new and less experienced employees.

Emergency Preparedness Training and Procedures

In May 2006, the Public Works staff participated in an emergency preparedness training class to review recently developed departmental emergency procedures and to receive information provided by the Fire Department that would better prepare their families for dangerous weather. The updated procedures will provide the Village with a higher level of response readiness during storm warnings by requiring staff to conduct continual assessment of our critical infrastructure.

Presentation to Both Illinois and California Emergency Services Managers Association

The Director of Public Works made presentations to both the Illinois and California Emergency Services Managers Association this past year. The presentations spoke to both the concept of Public / Private Sector Partnerships in Emergency Management and the Role of Public Works in Emergency Management. Both of these presentations were well received, as we seek to elevate the role and perception of all public works employees in emergency roles.

Garage Door Hardware Replaced

In a safety audit conducted by the Illinois Municipal League Risk Management Team in May, it was determined that the overhead garage door hardware at Public Works needed to be replaced. The hardware did not have auto stop, which is required in the event someone is in the door way when the doors are closing. New hardware was purchased and installed. New motors and sensing devices were installed on all 11 doors.

Public Works Personnel



Jeff Maute
Superintendent of Streets
Service – 35 Years

Certification – Class 2
Wastewater Treatment Works
Operator Certificate
Class D Public Water Supply
Operator Certificate



Betty Harrison
Superintendent of Water
and Water Reclamation
Service – 7 Years

Certification – Class 1
Wastewater Treatment Works
Operator Certificate
Class A Public Water Supply
Operator Certificate

Public Works Personnel

Water Department



Rick Kuester
Foreman of Water Department
Service – 31 Years

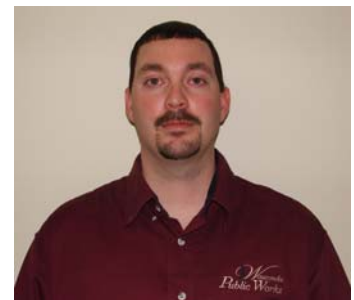
Certification - Class A Public Water Supply Operator Certificate



David Kruger
Maintenance Service Technician
Service – 14 Years



Mark Gedde
Water Operator
Service – 5 Years
Certification – Class B Public
Water Supply Certificate



Bart Romero
Water Operator
Service – 5 Years
Certification – Class C Public
Water Supply Certificate



Paul Lorenz
Maintenance Service Technician
Service – 3 Years



David Schilf
Maintenance Service Technician
Service – 9 Months

Public Works Personnel

Water Department (Continued)



Donna Baseley
Administrative Assistant
Service – 3 Years



Tina Nedza
Billing Clerk
Service – 1 Year

Public Works Personnel

Street Department



Alex Pryde
Foreman of Street Department
Service – 5 Years

Certification - Class B Public Water Supply Operator Certificate



Frank Burton
Maintenance Service Technician
Service – 5 Years



Jarrett Kalal
Maintenance Service Technician
Service – 3 Years



Bob Garrod
Maintenance Service Technician
Service – 2 Years



Chris Esvang
Maintenance Service Technician
Service – 2 Years
Certification – Certified Arborist



Steve Jenkins
Maintenance Service Technician
Service – 1 Year



Ken Friedrich
Maintenance Service Technician
Service – 8 Months

Public Works Personnel

Water Reclamation Facility Department



Jacob Mann

Foreman of Water Reclamation Facility Department

Service – 10 Years

Certification - Class 1 Wastewater Treatment Works Operator Certificate



Duke Goessling

Sewer Operator

Service – 6 Years

**Certification - Class 2 Wastewater Treatment
Works Operator Certificate
HAZWOPER Certified**



David Miks

Sewer Operator

Service – 5 Years

**Certification - Class 1 Wastewater Treatment
Works Operator Certificate
HAZWOPER Certified**



Luke Markko

Sewer Operator

Service – 1 Year

**Certification - Class 1 Wastewater Treatment
Works Operator Certificate
HAZWOPER Certified**



Anna Koostra

Lab Technician

Service – Less than 1 Month